

Listing of the claims:

1. (Currently amended) A transmission synchronizer, comprising
a coupling sleeve;
a synchro hub;
a balk ring including a balk ring cone surface;
a clutch gear including a clutch gear cone surface;
a relative rotation regulating structure located between the balk ring and the synchro hub; and
a synchronizing support force generating mechanism located between the balk ring and the synchro hub and spaced apart in a circumferential direction from the relative rotation regulating structure;
wherein a relative rotation is generated between the synchro hub and the balk ring during a shift by a minute synchronizing torque generated between ~~a the~~ balk ring cone surface and ~~a the~~ clutch gear cone surface, the relative rotation inducing a circumferential force;
wherein the synchronizing support force generating mechanism is adapted to convert the circumferential force to ~~an axially-applied~~ a synchronizing support force, the ~~axially applied~~ synchronizing support force ~~pressing~~ axially-applied to press the balk ring against the clutch gear ~~and a relative rotation regulating structure, where the relative rotation regulating structure is located between the balk ring and the synchro hub~~;
wherein the ~~synchronizing support force generating mechanism, while in neutral,~~ relative rotation regulating structure is adapted to regulate the relative rotation between the balk ring and the synchro hub ~~so that to prevent generation of the synchronizing support force is not generated by the synchronizing support force generating mechanism while in neutral.~~
2. (Currently amended) The transmission synchronizer of claim 1, wherein
the synchronizing support force generating mechanism ~~is installed in a position that faces the synchro hub and the balk ring along the axial direction and consists of~~ includes a synchro hub concave portion of the synchro hub and a balk ring convex portion that generates a of the balk ring, the synchro hub concave portion and the balk ring convex portion extending axially and the synchronizing support force generating mechanism generating the

synchronizing support force by coming into contact with a cam surface due to the ~~indexed~~ relative rotation between the synchro hub and the balk ring, ~~and where ; and wherein~~

~~the relative rotation regulating structure is installed in a position that faces the synchro hub and the balk ring along the axial direction and consists of~~ includes a relative rotation positioning concave portion and a relative rotation positioning convex portion extending axially that regulate the amount of relative rotation between the synchro hub and the balk ring by means of ~~the~~ concave-convex contact of the relative rotation positioning concave portion and the relative rotation positioning convex portion.

3. (Currently amended) The transmission synchronizer of claim 2, wherein a circumferential gap between ~~the~~ an inclined surface of the synchro hub concave portion and ~~the~~ an inclined surface of the balk ring convex portion is L1, ~~and~~ a circumferential gap between the relative rotation positioning concave portion and the relative rotation positioning convex portion is L2, ~~such that~~ and L1 is larger than L2.

4. (Currently amended) The transmission synchronizer of claim 2, wherein the relative rotation positioning concave portion is adapted to engage with the relative rotation positioning convex portion when in neutral, and to release engagement during the synchronizing operation.

5. (Currently amended) The transmission synchronizer of claim 4, wherein an axial ~~distance~~ length of the relative rotation positioning convex portion is L4, ~~and~~ an axial moving distance of the balk ring ~~for~~ during synchronization is L3, ~~such that~~ and L3 is larger than L4.

6. (Currently amended) The transmission synchronizer of claim 2, wherein the relative rotation positioning concave portion ~~are~~ comprises one or more rectangular grooves, and the relative rotation positioning convex portion ~~are~~ comprises one or more rectangular projections.

7. (Currently amended) The transmission synchronizer of claim 2, wherein

the relative rotation positioning concave portion is a trapezoidal groove with a ~~narrower~~ circumferential length at ~~the~~ its opening narrower than ~~the~~ a circumferential length at ~~the~~ its bottom, and the relative rotation positioning convex portion is a trapezoidal projection with a ~~wider~~ circumferential length at ~~the~~ its top wider than ~~the~~ a circumferential length at ~~the~~ its base.

8. (Currently amended) The transmission synchronizer of claim 7, wherein the circumferential length of the relative rotation positioning concave portion at ~~the~~ its opening is L5~~and~~, the circumferential length of the relative rotation positioning convex portion at ~~the~~ its top is L6, ~~such that~~ and L5 is larger than L6.

9. (Currently amended) The transmission synchronizer of claim 2, wherein the relative rotation positioning concave ~~portions are~~ portion is one of a plurality of concave circumferentially-spaced portions, each of the plurality comprising a rectangular grooves groove, and the relative rotation positioning convex portion is one of a plurality of convex circumferentially-spaced portions are, each of the plurality comprising two rectangular projections.

10. (Currently amended) A method of operating a transmission synchronizer, comprising:

generating a relative rotation between a synchro hub and a balk ring during a shift by a minute synchronizing torque generated between a balk ring cone surface and a cone surface of a clutch gear, the relative rotation inducing a circumferential force; ~~and~~

converting the circumferential force to ~~an axially applied~~ a synchronizing support force using a synchronizing support force generating mechanism located between the balk ring and the synchro hub, the axially applied synchronizing support force pressing axially applied to press the balk ring against the clutch gear; and

regulating the relative rotation between the balk ring and the synchro hub so that the synchronizing support force is not generated in a neutral position using a relative rotation regulating structure located between the balk ring and the synchro hub and spaced apart in a circumferential direction from the synchronizing support force generating mechanism.

11. (Canceled).

12. (Currently amended) The method of claim 10, wherein ~~converting the circumferential force to an axially applied synchronizing support force, the axially applied synchronizing support force pressing the balk ring against the clutch gear further comprises converting the circumferential force to an axially applied synchronizing support force, the axially applied synchronizing support force pressing the balk ring against the clutch gear and a relative rotation regulating structure, where the relative rotation regulating structure is located between~~ formed of facing portions of the balk ring and the synchro hub.

13. (Currently amended) The method of claim 12, wherein ~~converting the circumferential force to an axially applied synchronizing support force, the axially applied synchronizing support force pressing the balk ring against the clutch gear and a relative rotation regulating structure, where the relative rotation regulating structure is located between the balk ring and the synchro hub further comprises generating a synchronizing support force by a the synchronizing support force generating mechanism that is installed in a position that faces is~~ formed of facing portions of the synchro hub and the balk ring ~~along the axial direction and consists of~~ comprises a synchro hub concave portion and a balk ring convex portion where the synchronizing support force is generated by the balk ring convex portion coming into contact with a cam surface due to the ~~indexed~~ relative rotation between the synchro hub and the balk ring, ~~and where ; and wherein~~

~~the relative rotation regulating structure is installed in a position that faces the synchro hub and the balk ring along the axial direction and consists of~~ comprises a relative rotation positioning concave portion and a relative rotation positioning convex portion that regulates the amount of relative rotation between the synchro hub and the balk ring by means of ~~the~~ concave-convex contact.

14. (Currently amended) A transmission with a synchronizer, the synchronizer generating a synchronizing torque when changing speeds between ~~an input shaft connected to an engine~~ connected to the transmission via a clutch and an output ~~shaft of the transmission~~, the transmission comprising:

a synchro hub ~~that is affixed to a transmission rotation shaft;~~

a coupling sleeve ~~that is connected to the synchro hub, the coupling sleeve being~~
and axially-movable toward the transmission rotation shaft clutch to change between a neutral position and a shift change position;

a main gear ~~that is rotatably disposed around the transmission rotation shaft, the~~
main gear being engaged to rotate with the output shaft of the transmission;

a clutch gear ~~that is integrated with the main gear, the clutch gear forming and~~
including a gear cone surface; and

a balk ring ~~that is positioned between the coupling sleeve and the clutch gear to~~
be axially-movable, the balk ring being formed and including a balk ring cone surface ~~which is~~
taper-fitted into the gear cone surface;

wherein the synchro hub and the balk ring form a synchronizing support force
generating mechanism ~~between the synchro hub and the balk ring on facing surfaces~~
therebetween to convert a circumferential force to an axially applied synchronizing support
force, and wherein the synchro hub and the balk ring form a relative rotation regulating
structure on the facing surfaces therebetween to regulate the relative rotation between the
synchro hub and the balk ring~~[[,]]~~ while in the neutral position, the synchronizing support force
generating mechanism and the relative rotation regulating structure spaced apart in a
circumferential direction from one another.

15. (Original) The transmission of claim 14, wherein the balk ring is adapted
to be pressed against the clutch gear with one of a motor actuator or a shift lever.

16. (Currently amended) A transmission with a synchronizer, the
synchronizer generating a synchronizing torque when changing speeds between ~~an input shaft~~
~~connected to an engine~~ connected to the transmission via a clutch and an output ~~shaft of the~~
transmission, the transmission comprising:

a synchro hub ~~that is affixed to the a transmission rotation shaft;~~

a coupling sleeve ~~that is connected to the synchro hub, the coupling sleeve being~~
axially-movable toward the ~~transmission rotation shaft~~ clutch to change between a neutral position and a shift change position;

a main gear ~~that is rotatably disposed around the transmission rotation shaft, the main gear being~~ engaged to rotate with the output shaft of the transmission;

a clutch gear ~~that is~~ integrated with main gear, the clutch gear forming a gear cone surface; and

a balk ring ~~that is~~ positioned between the coupling sleeve and the clutch gear to be axially-movable, ~~the balk ring being formed~~ and including a balk ring cone surface ~~which is~~ taper- fitted into the gear cone surface;

means for converting a circumferential force to an axially applied synchronizing support force, the converting means being integral portions of facing surfaces of the synchro hub and the balk ring; and

means for regulating a relative rotation between the synchro hub and the balk ring ~~[[,]]~~ while in the neutral position, the regulating means being integral portions of the facing surfaces of the synchro hub and the balk ring and being spaced apart in a circumferential direction from the converting means.

17. (Original) The transmission of claim 16, wherein the circumferential force is induced by the relative rotation, where the relative rotation is generated between the synchro hub and the balk ring during a shift.

18. (Original) The transmission of claim 16, wherein the balk ring is adapted to be pressed against the clutch gear with one of a motor actuator or a shift lever.